

## **ABSTRACT**

### **(LITERATURE REVIEW)**

#### **EFFECT OF ETHYL CELLULOSE AND POLYVINYLPYRROLIDONE AS POLYMERS ON PENETRATION TESTS OF PATCH PREPARATIONS**

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*Transdermal patch preparations are preparations that work by allowing the drug to enter the skin where it will experience a systemic effect. Transdermal delivery is a term used in situations where the drug diffuses through the various layers of the skin and leads to systemic targets. In the administration of drugs by Transdermal Delivery, it can be referred to as a patch. One of the basic components of a patch is a polymer. Polymers play an important role in producing patch preparations with good physical characteristics. Polymers are substances made from a polymerization process which can be divided into two groups, namely water-soluble polymers and water-insoluble polymers. Based on the description of the background above, a study was conducted on the effect of using a combination of ethyl cellulose and polyvinylpyrrolidone (PVP) polymers on the physical characteristics of the transdermal patch. The general objective of this study was to determine the effect of the combination of ethylcellulose with polyvinylpyrrolidone on patch preparations.*

*Based on the literature review of these 3 articles, overall it was concluded that the effect of ethyl cellulose polymer with polyvinylpyrrolidone on patch preparations in the first literature, in organoleptic testing resulted in good physical characteristics with a ratio of F2 (8:2), F3 (9:1) and able to penetrate (deliver the active substance into the skin) well, and in the permeation test there was the highest permeation value in 46.09% rat membrane and 66.30% rabbit membrane. From the results of the second literature, it can be concluded that the patch with PVP polymer which is physically good, homogeneous and by in-vitro test is able to deliver 1.3884 mg/cm<sup>2</sup> of diclofenac potassium with a percentage of 8.9% for 180 minutes into the skin, so it can be absorbed into the skin. used as an alternative to avoid side effects on the gastrointestinal tract. While in the third literature, it was concluded that, in organoleptic testing and flux testing as the optimal matrix type transdermal patch preparation, the matrix type transdermal patch preparation with a combination of ethyl cellulose polymer (EC) N-20 and polyvinylpyrrolidone (PVP) K-30 is FIII with a ratio of 7:3 and PEG 400 by 20% and 1% menthol as an enhancer.*

**Keywords :** Ethyl Cellulose, Polyvinylpyrrolidone, Polymer, Penetration, Patch.